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MICROWAVE INSTRUMENT FOR ROSETTA ORBITER (MIRO)

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MIRO is a scientific instrument designed for the orbiter of the Rosetta International Mission. It will address the nature of the cometary nucleus, outgassing, and the development of the coma as strongly interrelated aspects of cometary physics. Scientific objectives arc to1) characterize the abundances of major volatile species and kcy isotopic ratios in the nucleus ices, 2) study the processes controlling the outgassing in the surface layers of the nucleus, 3) study the processes controlling the development of the inner coma, 4) globally characterize the nucleus subsurface to depths of a fcw centimeters or more, and 5) search for low levels of gas in the asteroid environment. The instrument is a dual-frequency, heterodyne receiver mounted rigidly on the orbiter spacecraft. Its center band frequencies are 236 GHz (1,3 mm) and 562 GHz (0.5 mm). It operates simultaneously as both a continuum and a *very* high spectral resolution line receiver. MIRO is pretuned to observe 21 transitions of nine molecules including water, carbon monoxide, ammonia, methanol, and various isotopes. Detailed parameters of the MIRO instrument, including its sensitivity, will be discussed. Simulated observations with the MIRO instrument will be shown,

Presentation to be made by S. Gulkis, J. Crovisier or W.-H. Ip.

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2. Session PS6: Small bodies of the Solar System - ROSETTA Payload.

3. Convener: Dr Gerhardt H. Schwehm.

4. No special equipment is required.

5. Oral presentation is preferred.